

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (currently amended) A modem apparatus comprising:

a sampling section that samples a reception signal;

a multiplier that calculates a product of the present sampling data by the sampling data ~~[[1]]~~ one data unit ahead;

an adder that ~~adds up~~ product values calculated ~~for every sampling by going back to the time point 1 data unit ahead~~ for every sampling by adding product values calculated from pervious samples occurring one data unit in advance; and

a detector that detects a reference timing with regard to a ~~CP~~ cyclic prefix signal using ~~the addition value~~ an addition value calculated by said adder.

Claim 2. (currently amended) The modem apparatus according to claim 1, wherein said detector detects a minimum value from ~~the~~ a time series data of said addition value and recognizes ~~the~~ a sampling timing corresponding to the detected minimum value as said reference timing.

Claim 3. (currently amended) The modem apparatus according to claim 1, wherein said detector detects a sampling timing at which ~~the~~ a sum ~~total~~ of products of each sampling data item corresponding to ~~the~~ a final symbol of a ~~reverb~~ REVERB signal sent in an initializing signal by each sampling data item corresponding to ~~the~~ a first symbol of

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a segue SEGUE signal sent following said ~~reverb~~ REVERB signal is output as said reference timing.

Claim 4. (currently amended) The modem apparatus according to claim 2, wherein the position ~~[[9]]~~ nine symbols ahead of the sampling timing corresponding to said minimum value is recognized as the beginning of the CP cyclic prefix signal.

Claim 5. (previously presented) An ADSL terminal side apparatus equipped with the modem apparatus according to claim 1.

Claim 6. (previously presented) An ADSL station side apparatus equipped with the modem apparatus according to claim 1.

Claim 7. (previously presented) A communication apparatus equipped with the modem apparatus according to claim 1.

Claim 8. (currently amended) A communication control method comprising:

sampling a reception signal;

calculating a product of the present sampling data by the sampling data ~~[[+]]~~ one data unit ahead;

adding ~~up~~ product values calculated ~~for every sampling by going back to the time point 1 data unit ahead~~ for every sampling by adding product values calculated from previous samples occurring one data unit in advance; and

detecting a reference timing with regard to a CP cyclic prefix signal using said ~~addition value~~ an addition value.

Claim 9. (currently amended) The communication control method according to claim 8, wherein a minimum value is detected from ~~the~~ a time series data of said addition value and ~~the~~ a sampling timing corresponding to the detected minimum value is recognized as said reference timing.

Claim 10. (currently amended) The communication control method according to claim 8, wherein a sampling timing at which ~~the~~ a sum total of products of each sampling data item corresponding to ~~the~~ a final symbol of a ~~reverb~~ REVERB signal sent in an initializing signal by each sampling data item corresponding to ~~the~~ a first symbol of a ~~segue~~ SEGUE signal sent following said ~~reverb~~ REVERB signal is output ~~is detected~~ as said reference timing.

Claim 11. (new) A modem apparatus, receiving, in a initialization sequence, symbols of a signal to which a cyclic prefix signal is added, after receiving a predetermined number of symbols of a SEGUE signal, the modem apparatus comprising:

a sampler configured to sample a received signal by each predetermined symbol;

a multiplier configured to multiply sampling data of a present symbol by sampling data of one symbol unit in advance;

an adder configured to cumulatively add an output value of the multiplier, the output value having a polarity;

a detector configured to detect a minimum value output by the adder;

a judger configured to judge a starting position of the cyclic prefix signal, based on the minimum value, the minimum value indicating a boundary between a first symbol of

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the SEGUE signal and a second symbol of the SEGUE signal, the starting position of the cyclic prefix signal coming after the predetermined numbers of symbols of the SEGUE signal.

Claim 12. (new) The modem apparatus according to claim 11, wherein the predetermined numbers of symbols of the SEGUE signal comprises ten symbols of the SEGUE signal.

Claim 13. (new) The modem apparatus according to claim 11, wherein the judger judges that the starting position of the cyclic prefix signal comes after the ninth symbol of the SEGUE signal from the detection of the minimum value.

Claim 14. (new) An ADSL terminal side apparatus equipped with the modem apparatus according to claim 11.

Claim 15. (new) An ADSL station side apparatus equipped with the modem apparatus according to claim 11.

Claim 16. (new) A communication apparatus equipped with the modem apparatus according to claim 11.

Claim 17. (new) A communication control method, symbols of a signal to which a cyclic prefix signal is added, being received after a predetermined number of symbols of a SEGUE signal being received in a initialization sequence, the communication control method comprising:

sampling a received signal by each predetermined symbol;

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multiplying sampling data of a present symbol by sampling data of one symbol in advance;

cumulatively adding an output value of the multiplier, the output value having a polarity;

detecting a minimum value output by the adder;

judging a starting position of the cyclic prefix signal, based on the minimum value, the minimum value indicating a boundary between a first symbol of the SEGUE signal and a second symbol of the SEGUE signal, the starting position of the cyclic prefix signal coming after the predetermined numbers of symbols of the SEGUE signal.